

22nd International Conference and Expo on**NANOSCIENCE AND MOLECULAR NANOTECHNOLOGY**

November 06-08, 2017 | Frankfurt, Germany

Synthesis and characterization of two types of recyclable magnetic nano ferrite catalysts**Seham S Alterary**

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In the present work, two types of magnetic-nanostructure catalysts were synthesized for highly efficient methodologies in organic chemistry processes [1]. The vital motivation for synthesizing nano-catalyst is to promote sustainability, enhance catalysis properties and provide great advantage to catalytic applications. The unique properties of magnetic nano-catalyst such as; easy separation methodology by external applied magnetic field and the recyclability expands these class of nano-catalysts to wide area of applications. In fact, the combination between sustainable catalysis and magnetic properties yields an extremely powerful and environmentally green organic processes [2]. synthesis of both nano- catalyst -in the current work- includes the metal ferrite oxide in nano- measurements. The silica supported nano-catalyst afford functionalization options to metal ferrite oxide nano-catalyst. At the first, nano-catalyst made of copper ferrite components (CuFe₂O₄ NP) was synthesized by co- precipitation (CPT) method. Subsequently, the sol-gel method was applied to synthesized the silica coated copper ferrite magnetic nanoparticles CuFe₂O₄@SiO₂. A selection of characterization techniques were chosen to understand and investigate the changes occur in physical properties in both types of nano-catalysts. The study focuses on their structural, morphological and physical properties. Depending on the following techniques; transmission electron microscopes TEM, scanning electron microscopes SEM, X-ray diffraction XRD, Energy-dispersive X-ray EDX, fourier transform infrared spectroscopy FTIR and the Zeta potential which may be a useful indication for catalytic performance of hetero nano-catalysts [3].

References

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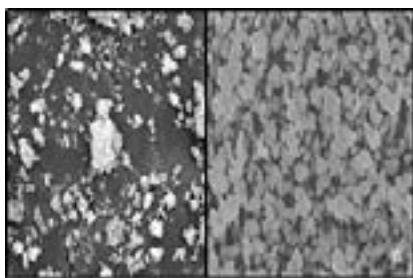


Figure 1: (A) SEM image of CuFe₂O₄ magnetic nanoparticles; (B) SEM image of CuFe₂O₄@SiO₂MNP

Biography

Seham S. ALTERARY is Saudi chemistry Professor who was born in Riyadh KSA. In 1994 she earned a B.S. in chemistry from the University of King Abdul-Aziz in Jeddah, where she accepted a position of demonstrator in Faculty of Science Chemistry Department in same University. In 2003, she earned Master degree of Science with Excellent grade at the University of King Abdul-Aziz in Jeddah. In 2003, she received her PhD from University of Paris Didrot 7 in Spectroscopic Methods & Nano-technology Applications in France. She enrolled in King Saud University as Assistant Professor of Organic Chemistry since 2011 till now. In 2014, she became the Vice-Head of the Department of Physics & Astronomy in Collage of Science King Saud University. She carried out many undergraduate and graduate researches. In 2016, she became supervisor of nanotechnology unit in girls University City. She is the co-editor of "Heterocyclic chemistry and biomolecules through practice problems "book.

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